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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/765,293

01/27/2004

James A. Zagzebski

1512,023

9187

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EXAMINER

SHAHRESTANI, NASIR

ART UNIT

PAPER NUMBER

3737

MAIL DATE

DELIVERY MODE

05/04/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/765,293

Applicant(s)

ZAGZEBSKI ET AL.

Examiner

Nasir Shahrestani

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/19/2005; 4/12/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites a 'region of interest', which can be interpreted as either 2-D or 3-D, and no 3-D structure is claimed. Additionally there is no voxel assemblage structure such as a volume memory claimed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1-7, 13-27, 31, 33-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Lin (U.S. 6,068,597).

Regarding claims 1, 3-4 & 21, Lin teaches various methods for identifying tumors using elastographic imaging (col. 1 lines 46-67; col. 2 lines 1-8), in which Doppler resonance response to the vibration of paired audio transducers (element 112) which yields strain displacement (col. 5 lines 30-33) which is a measurement related to

Art Unit: 3737

strain, the transducer is an electronically steered (col. 4 line 42) phased array which therefore is steered to different angles to form a sector scan, the different levels of audio output power (col. 5 line 5) resulting in different levels of vibration compressibility over which echographic samples are taken for a region of interest (embedded tissue element 422), and processor compounds this data from different angles to form a measurement for a voxel (col. 4 lines 44-48), examiner construes pixels gathered for three-dimensional representation to be voxels by definition.

Regarding claim 2, Lin further teaches wherein the processor provides a strain extractor (col. 5 lines 39-42) and a combiner operating together to receive a set of echo signals and produce the compounded strain measurement (col. 1 lines 56-65).

Regarding claims 5-7, Lin also teaches that after allowing a predetermined amount of time for a resonance vibration to stabilize, the sequencer initiates acquisition of a spectral data point (col. 7 lines 35-38).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-12, 28-30, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. 6,068,597) in view of Ueki et al. (U.S. 6,377,656 B1). Lin teaches all the limitations of claim limitations of claims 1-7 and 21-27 as described but does not

Art Unit: 3737

specifically teach the varying weighting functions related to an estimate of Poisson's ratio. In the same field of endeavor, Ueki et al. teaches and imaging apparatus and method for manipulating weighting function of normal distribution (col. 14 lines 66-67 and col. 15 lines 1-7). It would have been obvious to one of ordinary skill in the art at the time of invention to have modified the apparatus and method as taught by Lin and to have incorporated the teachings of Ueki et al. since the weighting function is never restricted to that of normal distribution and manipulation would be advantageous.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Reference Burcher et al. (U.S. 2004/0254460 A1) teaches a transducer array that may use spatial compounding ('different angles') for voxels in association with inverse or reverse deformation measurement to null out the effect of transducer deformation force.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nasir Shahrestani whose telephone number is 571-270-1031. The examiner can normally be reached on Mon.-Thurs: 7:30-5:00, 2nd Friday: 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Art Unit: 3737

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



NSS

4/27/2007


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